REMARKS

Claims 1-30 are pending. By this Amendment, the specification is amended to correct several minor errors, and claims 3, 4, 5, 6, 7, and 11 are amended to correct antecedent inconsistencies. An appendix showing the marked changes is attached.

In the Office Action, the drawings are objected to for showing reference numeral 214 directed to two different elements and for calling element 216 two different names. Submitted herewith is a Request for Approval of Drawing Corrections changing the reference numeral 214 in Fig. 4 to - - 215 - -. The specification is also amended to reflect that change and to correctly recite element 216 as the *flexible* member. Upon approval of the proposed correction to Fig. 4, formal corrections will be made.

Claims 4-14 are rejected under 35 U.S.C. §112, second paragraph, for several antecedent inconsistencies. By this Amendment, claims 3, 4, 5, 6, 7, and 11 are amended to correct the dependency of these claims in order to provide proper antecedent support. It is submitted that the claims are definite and requested that the rejection be withdrawn.

Claims 1, 2, 5, 6, 15, 16, 17, 19, 20, 21, and 23-30 are rejected under 35 U.S.C. §103 (§103) as being unpatentable over U.S. Patent 5,598,065 to Lakosky in view of "Applicant's Admitted Prior Art (AAPA)".

The Office Action states that Lakosky discloses Applicants' claimed invention except for the turbocharger or continuously variable transmission (CVT). The Office Action further asserts that Applicants have disclosed that it is well known to use a turbocharger in conjunction with a four-stroke engine and a CVT to increase power output and fuel efficiency of the engine and to reduce or prevent turbo lag and that it would have been obvious to provide a turbocharger on the four-stroke engine of Lakosky to increase power output and

fuel efficiency. The Office Action additionally states that all of the features of claims 2 and 15-17 are inherent properties of an engine and turbocharger. As for claims 5, 6, 20, 21, and 26-30, the Office Action admits that Lakosky does not disclose the position of the air passage, the CVT, the turbocharger or the plenum, yet asserts that it would have been obvious to position the elements as claimed because "rearranging parts of an invention involves only routine skill in the art."

Lakosky discloses a snowmobile having "a typical two or four stroke internal combustion engine" (col. 4, lines 20-21). The specification and figures are silent as to any details of the engine, other than it is *typical.*

Referring to the portions of this application named AAPA in the Office Action, the specification states, in the background of the invention, the following (emphasis added):

> **[0005]** It is known *outside* the art of snowmobiles to use a turbocharger in conjunction with a four-stroke engine to increase the power output and fuel efficiency of the engine. However, a turbocharged V-twin engine has *not previously been considered feasible* for utilization with a snowmobile.

The detailed description of the invention states the following (emphasis added):

> **[0057]** Furthermore, with respect to the turbocharger 300, previous use of a turbocharger has been *unfeasible in a snowmobile due to turbo lag*, described above, during rapid throttle advancement. Consequent to the nature of snowmobiles and the environment they are operated in, rapid throttle advancement is a common occurrence in normal and severe operating conditions. This can result in turbo lag in a turbocharged engine. However, the use of a continuously-variable-transmission (CVT) in the snowmobile, *as is well known in the art*, can help reduce or prevent turbo lag.

The above passages clearly state that although turbocharged four-stroke engines are known in general, such engines have **not** been used in the past in snowmobiles due to turbo lag. It is also stated that CVTs have been used in snowmobiles, as is well known. As one of ordinary skill in the art of snowmobiles would readily recognize the well known use of CVTs relates to **two-stroke** engines, **not turbocharged four-stroke** engines, which Applicants

clearly state have not been used in snowmobiles in the past. Applicants have invented the combination of a turbocharged four-stroke type engine in a snowmobile with an endless belt drive system. The Office Action is using Applicants' own invention as a basis for the rejection, which is clearly improper.

Lakosky merely states that a **typical** four stroke engine may be used in the snowmobile. There is no discussion as to the drive system, which could even be a geared system. There is simply no motivation to leap from Lakosky's typical four-stroke engine to a turbocharged four-stroke engine, which heretofore has not been used in snowmobiles as specifically noted in the passages identified as AAPA. Further, there is no motivation to create a combination of a turbocharged four-stroke engine in combination with an endless belt system or in combination with an air intake system, as described and claimed by Applicants, other than by using hindsight in view of Applicants' own disclosure. Accordingly, the rejection is improper and should be withdrawn. Claim 1 is allowable.

As to the dependent claims, since there is no suggestion for using the claimed turbocharged four-stroke engine or the combination of the turbocharged four-stroke engine and the endless belt system, the claimed details of the system and particularly the arrangement of elements would not be inherent or of routine skill as no such combination has been presented before.

Claims 3, 4, 7-14, 18 and 2 [sic 22] are rejected under §103 over Lakosky in view of AAPA and further in view of U.S. Patent 4,698,761 to Cooper et al. Cooper is added to the rejection to show that a heat exchanger/intercooler connected to a turbocharger and a plenum is well known for use with an engine to supply clean, compressed air to the cylinders of an engine. The Office Action also asserts the features of claim 7 to be inherent and the

arrangement recited in claims 8-10, the volume in claim 14, and the speed range in claims 18 and 22 to involve only routine skill in the art.

Cooper relates to traction vehicles such as locomotives that have thermal prime movers on board. Cooper is in no way related to a snowmobile or an engine for a snowmobile. One of ordinary skill in the art of snowmobiles would have no motivation to look to a system for a locomotive like Cooper's to make modifications to a snowmobile engine. Thus, as there is no suggestion for making the combination proposed in the Office Action, the combination is improper. Further, even if Cooper could be combined with Lakosky and Applicants' own disclosure, Cooper does not remedy the deficiencies of the combination of Lakosky and Applicants' discussion of the prior art explained above. As such, the addition of Cooper to Lakosky and AAPA does not render claims 3, 4, 7-14, 18 and 22 obvious. These claims are allowable for the reasons above and for the additional features recited therein.

It is noted that the Office Action cites several U.S. Patents as prior art of record which are not or may not be prior art. U.S. Patent Application Publication US2002/0027029 has a publication date of March 7, 2002, which is after this application's effective filing date of November 13, 2000, and therefore is not prior art. U.S. Patents 6,415,759 and 6,390,869 are each based on two provisional applications, one of which has a filing date before Applicants' effective filing date and one of which has a filing date after Applicants' effective filing date. Therefore, it is uncertain without further analysis of the provisional applications as to whether these patents are prior art to this application.

It is respectfully submitted that the application is now in condition for allowance. Should further issues require resolution prior to allowance, the Examiner is requested to telephone the undersigned.

Respectfully submitted,

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APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION

Please amend paragraphs **[0030]** and **[0032]** as follows:

[0030] It is preferable for the inlet 202 to be positioned as far as possible from the engine 100 and exhaust system 24, such that the coolest air possible may be allowed to enter the inlet 202. For this reason, and to prevent the intake of snow, an inlet opening 211 (shown in Figure 4) may be located within an upper portion 28 of the snowmobile 10 (shown in Figures 1 and 4) proximate the steering control assembly 20. It is contemplated that for the embodiment illustrated in Figure 3, the inlet 202 of the air box 200 may communicate with the inlet opening 211 with a heat-shielded duct or conduit shown in Figure 4 at 213. The shielded duct 213 allows cool atmospheric air to travel from the vent structure to the inlet 202 without gaining significant heat from the engine 100 and exhaust system 24. As shown in Figure 4, it is preferable for a seal [214] 215 to be provided between the duct 213 and the inlet 202 to prevent air leakage therebetween. It is also contemplated, however that the air box 200 may be positioned aft of the engine 100 such that the inlet 202 may directly communicate with the inlet opening 211 or such that a relatively shorter length of heat-shielded duct 213 may be necessary. A filter (not shown) may be positioned at inlet 202 or the inlet opening 211 within the air flow to screen or prevent particles from entering the air box 200.

[0032] Figure 5 shows the fastening device 212 in more detail. As shown, the fastening device 212 may include one or more circular clamps 214 and a flexible member 216. The flexible member 216 has a configuration that allows it to be disposed around the outlet 208 on one end and an associated end portion of the conduit 210 on an opposite end. The circular

clamps 214 are then secured around the flexible member 216 proximate each end thereof to thereby secure the [fastening] flexible member 216 to each of the outlet 208 and the conduit 210. It is preferable for the fastening device 212 to include the flexible member 216 to allow relative vibrational movement between each of the outlet 208, conduit 210 and the turbocharger 300 to prevent fatigue stress and possible cracking of any of these parts or the fastening device 212 itself, as may occur with a rigid connection at these points due to vibrations caused by the engine 100 and movement of the snowmobile 10.

IN THE CLAIMS:

Please replace claims 3, 4, 5, 6, 7, and 11 as follows:

3. (Amended) A snowmobile as in claim [1] 2, further comprising a heat exchanger formed of a heat conductive material connected to said turbocharger such that the pressurized air from said turbocharger may enter therein, said heat exchanger being constructed and arranged such that heat from the pressurized air is dissipated therefrom to the atmosphere via said heat conductive material.

4. (Amended) A snowmobile as in claim [1] 3, further comprising a plenum connected to said heat exchanger such that air from said heat exchanger may enter said plenum, said plenum further connected to said air inlet and being constructed and arranged such that cyclically pressurized amplitude of the air from said turbocharger via said heat exchanger may collect therein such that the pressurization amplitude of the air upon exiting the plenum and entering said air inlet is substantially constant.

5. (Amended) A snowmobile as in claim [1] 2, wherein said air passage is positioned forward of said engine in spaced relation thereto in order to prevent significant heating of air within said air passage.

6. (Amended) A snowmobile as in claim [1] 2, wherein said air passage is positioned aft of said engine in spaced relation thereto in order to prevent significant heating of air within said air passage.

7. (Amended) A snowmobile as in claim [1] 3, wherein said heat exchanger is an intercooler, said intercooler including an intake portion and an outlet portion, said intake and outlet portions connected by a series of spaced hollow conduits.

11. (Amended) A snowmobile as in claim [2] 3, wherein said air passage communicates with said turbocharger via a first duct member and said turbocharger communicates with said heat exchanger via a second duct member.

END OF APPENDIX